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Proceedings of a Conference on Agricultural Education in Our Public Schools

Center for Agricultural Adjustment, Iowa State College

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Proceedings of a conference on

AGRICULTURAL EDUCATION IN OUR PUBLIC SCHOOLS

May 18 and 19, 1959

Sponsored by
THE CENTER FOR AGRICULTURAL ADJUSTMENT
Division of Agriculture
Iowa State College
Ames, Iowa

CAA REPORT 1

FOREWORD AND ACKNOWLEDGEMENTS

Vocational Agriculture has played an important role in helping young men become established in farming. Much of our success in more than meeting the food and fiber needs of our rapidly growing population today can be attributed to Vocational Agriculture. But, questions are being raised about the need for continuation of such an extensive program of preparation for farming in view of the reduced number of farming opportunities each year. Furthermore, questions are being raised about the adequacy of preparation for farming by a program that is terminal at the high school level, and about the adequacy of preparation for college if a student devotes much of his high school time to Vocational Agriculture.

With the greater emphasis recently on education in science and mathematics in high school, many parents are asking college administrators and guidance counselors whether their sons should take Vocational Agriculture if they are planning to attend college.

This conference was planned to take an objective look at Vocational Agriculture in relation to the adjustments taking place in agriculture and in our society as a whole. The participants were from three areas: teacher trainers from agricultural colleges, directors of resident instruction from agricultural colleges, and supervisors of vocational agriculture from state department of education. Representatives from these areas from all states were invited to the conference and twenty of them were asked to prepare papers for presentation and publication in these proceedings. Each paper that follows is brief and to the point. Although several titles of papers are similar, the points of view are different.

The Center for Agricultural Adjustment in cooperation with the Kellogg Foundation sponsored this conference and made it possible for us to distribute these proceedings. I wish to express appreciation to H. T. Hall, State Supervisor of Vocational Agriculture, Des Moines, Iowa; H. M. Hamlin, Head of Agricultural Education, University of Illinois; and H. S. Brunner, Specialist for the Agricultural Science Department of Health, Education, and Welfare, Washington, D. C., who helped me with the planning of this conference.

Louis M. Thompson
Associate Dean of Agriculture
Iowa State College

Conference

AGRICULTURAL EDUCATION IN OUR PUBLIC SCHOOLS

Sponsored by the Agricultural Adjustment Center

Memorial Union

Ames, Iowa

May 18-19, 1959

May 18 — 8:30 a.m. to 12:00 noon - Gallery Room

8:00 Registrations

8:30 Introductions - Louis M. Thompson, Presiding
Objectives of the Agricultural Adjustment Center - Floyd Andre

9:00 Is there a need for training in Agriculture of secondary school students who do not expect to be farmers?

Orville Thompson, California
Norman Hoover, Pennsylvania
H. M. Hamlin, Illinois
Roy M. Kottman, West Virginia
Walter Jacoby, Connecticut

12:00-1:00 Lunch (Cafeteria) - - - - - - - - - - - - - - - - - - Pine Room

1:15-5:00 Gallery Room - - - - - - - - - - - - C. E. Bundy, Presiding
Should the objectives of Vocational Agriculture be changed to include training of students for Agri-business occupations ?

E. V. Walton, Texas
Mark Nichols, Utah
C. S. Hutchison, Ohio
Carl Humphrey, Missouri
Walter Bjoraker, Wisconsin
Ray Agan, Kansas

6:30 Dinner- Oak Room
Earl Heady, Presiding
Address by Gale Johnson, Economist, University of Chicago

May 19 — 8:30-12:00 - Gallery Room - H. S. Brunner, Presiding
Should Vocational Agriculture be treated as a terminal education program or as an intermediate stage in formal educational development?

A. H. Krebs, Illinois
R. M. Swenson, Michigan
George Ekstrom, Missouri
Ralph Benton, Illinois
Frank Eldridge, Nebraska
R. W. Montgomery, Alabama
John Williams, Arizona

12:00 Lunch (Cafeteria) - - - - - - - - - - - - - - - - - - Pine Room

1:15-3:00 Gallery Room H. M. Hamlin, Presiding
Where do we go from here?
General Discussion

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IS THERE NEED OF EDUCATION IN AGRICULTURE OF SECONDARY SCHOOL STUDENTS WHO DO NOT EXPECT TO BE FARMERS?

H. M. Hamlin

We need desperately a program of general education in the public schools suited to our times and preparatory for the times which lie ahead. Vocational and technical education is vital in our kind of society, but it must be balanced with education for the non-vocational activities of life. It is inconceivable that a modern program of general education would omit education in agriculture.

Agriculture provides the food and fiber essential for life itself. It affects vitally every man, woman, and child. It is a major part of our economy. The inadequate and sometimes prejudiced treatment it receives in our programs of general education is only one of many indications that we do not provide in this country the kind of general education that is needed.

All are consumers of agricultural products. All share in making public policy for agriculture. Farmers are now a small minority group within the population. It is unsafe, as well as unfair, to limit agricultural education to this small minority. It is even more dangerous and more discriminatory to limit it to male farmers and prospective farmers, who farm or will farm commercially on large acreages as we have been tending recently to do.

Some of the groups now largely unserved, who need appropriate agricultural education and who have shown that they will take it and profit from it are the following: children and youth who may find their life work in some agricultural occupation other than farming, farm women and girls, part-time and acreage farmers, rural non-farm people, residents of small cities dependent upon agriculture, workers in occupations closely related to farming and farmers, owners and prospective owners of farm land, those with agricultural hobbies or responsibility for home grounds.

Agricultural education should be a function of a school system, not a function of a department in a secondary school. Five forms of agricultural education are currently being provided: vocational agriculture (vocational education in farming), vocational education in agricultural occupations other than farming, general agriculture (for those who have not made occupational choices), non-vocational education in agriculture (for those who have chosen occupations outside the field of agriculture), and agricultural education provided in non-agricultural subjects by teachers other than teachers of agriculture.

Agricultural education for non-farmers of some type may appropriately be provided in the elementary school, the junior high school, the senior high school, the community college, and the adult division of a public school system. It will take years to find out what should be done at each of these levels. It is a major task of agricultural educators and others to find out.

H. M. Hamlin is chairman, Division of Agricultural Education College of education, University of Illinois.

One thing we must surely do: We must provide for all students in a school system adequate counseling about the opportunities and requirements in agricultural occupations and the agricultural education necessary to enter and succeed in these occupations.

Some of the topics which have found their way into courses in agriculture for non-farmers are the following:

1. The importance to all of the contributions of agriculture
2. The history and prospects of agriculture
3. Conservation of soil, water, wild life
4. How domesticated plants and animals grow, reproduce, are improved
5. Man's relationships to plant and animal life
6. Public policy for agriculture
7. The rural community, rural-urban relationships
8. Farmers organizations including cooperatives
9. Public agricultural agencies, their functions, how they may be used
10. Agricultural occupations and recreations
11. Landscaping, care of home grounds, gardens, small fruits
12. Factors in the cost of producing food
13. National and world relationships of the agriculture of a community

Our land-grant colleges and universities and our state departments of education must begin to provide services to those who teach agriculture to non-farmers comparable to those now provided for those who teach farmers and prospective farmers. These services should include pre-service and in-service training of teachers and the development of special teaching aids usable not only in special courses in general or non-vocational agriculture but in courses in the natural sciences and the social studies and in the elementary schools.

Through enlarging the clientele served by public school education in agriculture we could increase enormously the impact of agricultural educators, including those in the agricultural colleges as well as those in the public schools, upon the thinking of the people of this country. One effect would be to step up the now lagging enrollments in the colleges of agriculture. These outcomes are, however, minor and incidental compared with the contribution that would be made by agricultural educators in helping to develop a realistic and modern program of general education in the public schools of the country to replace the fourteenth century concepts of general education which now prevail.

IS THERE A NEED FOR EDUCATION IN AGRICULTURE OF SECONDARY SCHOOL STUDENTS WHO DO NOT EXPECT TO BE FARMERS?

Norman K. Hoover

There obviously are several types of training involved in or implied in this question. For the purposes of this discussion I will limit my remarks to the need for training in agriculture by those who will enter off-farm occupations closely related to the on-farm activities and occupations that do not require a college education.

Based on a study conducted in Pennsylvania by the writer during 1956, the position being taken is that there is evidence that the secondary school program in vocational agriculture does make a contribution to the occupational preparation of students who do not expect to be farmers; but who will enter off-farm occupations closely related to on-farm production problems.

Purpose of the Study

The primary purpose of the study was to determine whether the Pennsylvania program for vocational education in agriculture, which is designed for establishment of young men in farming, contributes to or is associated with establishment in related agricultural occupations as measured by certain selected criteria.

The main objective was to determine whether graduation from the curriculum in vocational agriculture was associated with establishment in a related agricultural occupation to a greater or lesser degree than graduation from other high school curricula.

Delimiting the Term Related Agricultural Occupations

One of the first problems which has to be faced is that of defining or delimiting the term "Related Agricultural Occupation" or "Off Farm Agricultural Occupation." These terms are too often used to include any occupation involving materials and equipment related to the production or processing and marketing of food and fiber. Agriculture in this broad sense includes all the avenues of industry which have a bearing on agriculture or agricultural products and it is not conceivable that vocational agriculture has a direct responsibility to such a broad area.

The term "related agricultural occupation," it is thought by the writer, can logically be limited by the following concepts: (1) farming is the production of food and fiber and is one phase of the total agricultural industry, (2) the occupations, other than farming itself, with which vocational agriculture must be concerned are those off-farm occupations servicing rather directly the farm enterprise through production materials and equipment or through the processing and marketing of food and fiber, (3) the occupations require some knowledge of farming and/or involve working with farm people, (4) the occupations are of such a nature that the employees are worth more to their employers because of their farm background, their knowledge of farming and their understanding of farm folk, (5) the occupations or the occupational steps leading to them are, only one step removed from an on-farm operation, (6) the occupations are serving the farm enterprise and farmers in a manner unique for the farm and not merely in the same way that they serve all other enterprises or persons.

Norman K. Hoover is assistant professor of agricultural education, Pennsylvania State University.

Based on the above definition, the following are examples of occupations which would be considered related agricultural occupations. Contrasting examples considered too distantly associated with on-farm production problems are given in parenthesis following each occupation: hauling milk from the farm to a dairy processing plant (delivering milk to consumers), selling wire fence (making wire fence in a steel mill), working in a tobacco receiving warehouse (stenciling hogsheads of tobacco), operating a sawmill in a rural area (operating a planer in a large planning mill), working in a feed mill (bagging flour in a large flour mill), butchering and processing meat (buying meat from a packing house and processing it), constructing and renovating barns and other farm buildings (doing general construction work for all persons but not specifically a farm type of construction), and selling farm supplies in a hardware store specializing in farm production supplies and equipment (clerking in a general hardware store in which farmers make purchases but only to the extent that all other persons purchase general consumer goods).

Design and Results of the Study

The major hypothesis of the study was that there is no significant difference in the degree of establishment in related agricultural occupations between young men who were graduated from vocational agriculture and those graduated from other curricula. Three supporting hypotheses relative to occupational classification of father, place of residence while in high school, and scholastic rank in high school class were tested. Five selected criteria, job satisfaction, advancement in the occupation, annual income, increase in net worth, and leadership score were used to test each of the four hypotheses.

Data were obtained from personal interviews with all available male graduates from the 1944 to 1951 classes in 25 randomly chosen Pennsylvania high schools who, with the aid of a panel of school personnel, were located in related agricultural occupations during the spring of 1956. Eighty of these were graduated from vocational agriculture and 62 from other curricula.

With respect to establishment in the related occupations, mean scores for all five criteria were significantly higher at the 5 per cent level for those who were graduated from vocational agriculture, i.e., the vocational agriculture graduates had achieved a higher mean degree of establishment as measured by: job satisfaction score, number of promotions, increase in net worth, annual income, and leadership participation score. For the hypotheses dealing with occupational classification of fathers and place of residence while the student was in high school, a significant difference was found only with respect to the criterion, increase in net worth. No relationship was found between rank in high school class and degree of establishment in an occupation.

Implications of the Study

The data indicate the following implications for the program in vocational agriculture:

1. Being farm reared contributed to the degree of establishment in a related agricultural occupation. Thus, a frequent pattern was: a farm-reared student elected vocational agriculture because of interets; the vocational agriculture program contributed a knowledge of production problems, mechanical skills, leadership abilities, ability to cooperate and work with people, and a broader knowledge of the agricultural industry; knowledge of the industry provided for a judicial choice of occupation; the latter led to greater job satisfaction which, in turn, led to increased promotions, wages, and net worth.

2. The inter-relationships shown among occupation of father, place of residence while in high school, choice of curriculum, and choice of occupation should be considered in student selection and in occupational guidance.

3. The limited information presented to students about related agricultural occupations indicates an area of need.

4. The many and varied skills used by those included in the study indicate that an attempt to teach all the skills needed for related agricultural occupations would not be feasible in vocational agriculture.

5. A recommended program would involve group instruction designed for establishment in farming with individual instruction related to the occupation chosen by the individual.

An Action Program Resulting From the Study

Because the study pointed to the need for agricultural occupation information, we in Pennsylvania have begun work in two areas.

1. A need for more information about job opportunities and entry opportunities for high school graduates was evident. With this in mind, a study has been conducted to determine the kinds of related agricultural occupations in several supervisory areas, the number of persons employed, the entry opportunities and employer reaction relative to pre-training needs.

2. A second area of work has been the development of job descriptions for a number of these off-farm agricultural occupations which are not listed in D. O. T. and about which there is very little information available to the teacher of agriculture and the guidance counselor.

In closing let me summarize by saying that we believe that vocational agriculture does contribute to the occupational preparation of those who will enter off-farm agricultural jobs, but that accompaning this program there must be provided considerable information about the kinds of occupations into which students with this training can enter.

IS THERE A NEED FOR EDUCATION IN AGRICULTURE OF SECONDARY SCHOOL STUDENTS WHO DO NOT EXPECT TO BE FARMERS?

Walter Jacoby

In my opinion the answer as to whether there is a need for education in agriculture of secondary school students who do not expect to be farmers is an emphatic yes. In preparation for this conference, I requested the members of our State Vocational Agriculture Consulting Committee to submit written statements regarding the question. The replies received from farmers, agriculturalists and school administrators supported my position.

My assumption is that we are dealing with the need for education in agriculture in those schools having vocational agriculture departments.

It appears that there are three groups of secondary school students, both rural and urban, who need varying degrees of education in agriculture; namely,

1. The entire secondary school population
2. Those secondary school students who are interested in agriculture
3. Those students who have vocational goals in agriculture

The entire secondary school population

Many aspects of agriculture are integrated in units of instruction in the course offerings of every comprehensive high school; Civics, Problems of Democracy, Economics, General Science and others. How these units dealing with agriculture are presented and how well they are taught should be of concern to all of us. Farmers are a minority today. They will become a smaller minority in the future. For our own preservation we should have as many people informed on the basic concepts of agriculture as is possible. The young people who have some access to agriculture in the public schools will have a better understanding and appreciation of the problems of farmers and farm families when they mature and enter into their own spheres of influence.

Vocational Agriculture leaders and teachers ought to try and coordinate agriculture teaching throughout the secondary schools. Too long we have placed the agriculture teacher above and apart from the rest of the school. He should be encouraged and given the responsibility for serving other teachers as a consultant on agriculture. He can see that what teachers know and are teaching is up to date and correct. He can develop sources of teaching aids and serve as counsellor on agriculture to the entire faculty.

Those secondary school students who are interested in agriculture

I can see great value derived from offering non-vocational courses as electives for those students who have an interest in agriculture. Some courses would be exploratory in nature, general or avocational, while others might include the historical, scientific and economic contributions of agriculture. Why should courses of this type be included in secondary school offerings? Well, you don't teach history only to those students who want to be historians; you

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Walter Jacoby is consultant for agricultural education, Connecticut State Department of Education.

don't teach chemistry only to those who wish to be chemists; you don't teach math only to those who wish to be mathematicians. You teach these subjects because they make a contribution to the education of a young person regardless of what he intends to be.

I am not advocating that vocational agriculture personnel beat-the-drums to have such courses included in secondary school offerings. However, I do feel that aid and comfort should be given to sound planning in these directions on the local level. Vocational agriculture instructors may or may not teach such courses. However, it is interesting to note that over half of these instructors are teaching courses other than vocational agriculture at the present time. Good courses of this kind can satisfy the needs of students that should not enroll in vocational agriculture as well as guiding others into the program.

Those students who have vocational goals in agriculture

These are the students who ordinarily enroll or should be enrolled in vocational agriculture programs. Included in this group are all secondary students who desire to make a beginning towards careers in farming or other positions in the field of agriculture.

Our State Vocational Agriculture Consulting Committee recognized early in its deliberations that the vocational agriculture programs in Connecticut should be "designed to train for farming" but must of necessity be of equal value to start boys on their way toward skilled, technical and professional opportunities in agriculture. The committee observed that in Connecticut for every 100 farm men expected to die or reach retirement age, only 90 young farm men will reach working age. Where would the young men come from to man the farms and fill the other agriculture positions in Connecticut agriculture? To design a program limited to those boys from farms who are going back to the farm would be disastrous. It was also recognized that the agricultural goals of the individual students will be changed or modified from time to time--thanks to a society in which they can.

The problem confronting the professional educators in agriculture was to design a program that provided effective instruction for students expecting to farm and those with other agricultural goals.

For the remaining portion of the time allotted, permit me to present a few principles being applied in our Regional Vocational Agriculture Departments:

Size of Administrative Unit

It will become increasingly difficult for single teacher departments to provide an adequate program of vocational agriculture in terms of the revolution that is taking place in agriculture. Multiple teacher units are more efficient and can offer a more effective educational program. Facilities and equipment must be appropriate to modern agriculture and agricultural science.

Admission of Students

Teachers of vocational agriculture consult with propective students, parents and guidance counselors concerning the advisability of pursuing the vocational

agriculture course. Students who have identified interest in agriculture careers are granted admission.

Vocational Agriculture Curriculum Offered

Due to the diverse interests and goals in a field as extensive and specialized as agriculture, the vocational agriculture curriculum is made up of exploratory, core and elective units. Core units are required of all students since the content serves as the beginning foundation on the "sciences" for further learning. Students assisted by the instructors are permitted to fill their program with elective units in terms of their future goals in agriculture.

Election of Other Courses

Through good guidance procedures, many students are advised to elect four additional courses that will contribute most substantially to future success in their chosen vocation. Programs can be related to the occupational goals and abilities of students which may be farming, agricultural business, off-farm employment or college.

Farm Experiences

Students lacking the facilities at home for satisfactory farming programs are encouraged to pursue a planned program of "supervised farm work experiences." This, too, can be related to future goals.

One closing thought; the demand for specialized talent has increased sharply during the past few years. Agriculture must continue to have its fair share of the highly talented young people. I quote from a report of our State Vocational Agricultural Committee, "Youth tend to develop interests in those areas encouraged in high school and that the lack of agricultural education has caused youth who should be in agriculture to enter other occupations."

We in agricultural education must take a new and broader look at agriculture and the educational programs we are offering. I wish to congratulate the staff of the Agricultural Adjustment Center for the leadership role they have taken in this undertaking.

IS THERE A NEED FOR EDUCATION IN AGRICULTURE OF SECONDARY SCHOOL STUDENTS WHO DO NOT EXPECT TO BE FARMERS?

Roy M. Kottman

Bender[1] at the Ohio State University has reported results of a study involving 1,316 high school graduates of 1953 and 1954. He found that 37% of this group went into full-time farming. Another 7% were employed in jobs related to Agriculture. Approximately 7% enrolled in a college of agriculture and an equal number enrolled in non-agricultural colleges. A total of 21% of the graduates were engaged in activities unrelated to agriculture. If these figures are representative of the situation in other states, we might conclude that about half of the high school graduates, who have been enrolled in vocational agriculture, terminate their formal education upon receipt of the high school diploma and begin work in agriculture. One in five enter jobs unrelated to agriculture and one in seven goes on to college.

The results of Bender's study suggest that it would be desirable to offer a separate and distinct type of vocational agriculture program for each of three groups, viz., young men who will enter farming immediately following high school graduation, non-farmers for whom high school will be the terminal program, and those who will become college students, half of whom will study agriculture at the college level. Unfortunately, it does not seem likely that we shall be able to make any such a priori separation of high school freshmen. Hence, we must seek a pattern for vocational agriculture in high school which will be more useful to all members of these three groups than any alternative which they might have. Either we must devise such a program or admit of a negative answer to the question to which we here address ourselves.

A Kansas study completed by Duncan F. Circle[2] in 1957, revealed significant differences in mean grade point averages upon graduation from college, with a degree in agriculture, between those students with five to seven units of vocational agriculture and those with no vocational agriculture. As the amount of vocational agriculture taken in high school was reduced, the mean grade point upon graduation from college in agriculture was reduced. A striking point in this study was that vocational agriculture and science taken in combination in high school resulted in the highest mean grade point,

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[1]Bender, Ralph E. Vocational Status of Students in Vocational Agriculture Graduating in 1953 and 1954. Nonthesis, 1956, Ohio State University. 14 p. Library, Department of Agrciultural Education, Ohio State University, Columbus.

[2]Circle, Duncan F. A Comparison of Certain Factors Between Agricultural College Graduates Who Took Vocational Agriculture in High School and Those Who Did Not. Master's Report, M.S., 1957, Kansas State College. 27 p. Library, Kansas State College, Manhattan.

but vocational agriculture was more helpful than science for college preparation as measured by mean grade points upon graduation from college in agriculture. There were highly significant differences in favor of students with a background in vocational agriculture in their grade point average upon graduation from college in agriculture, when compared with students having no vocational agriculture in high school.

Lathrop[3] in a study involving 344 students enrolled in Agriculture at Iowa State College, 92 of whom had a high school background in vocational agriculture, could find no advantage similar to that found by Circle[2], in the Kansas study. Lathrop[3] concluded that the high school pattern of courses which seemed to best equip a student for doing work in a college of agriculture consisted of 12 semesters of mathematics and science.

The lack of agreement in the Kansas and Iowa studies suggests a need for further investigation. Should further data indicate the Kansas results to be typical of the performance of students graduating from colleges of agriculture in other states, then it would seem that training in agriculture for secondary school students who do not go into farming, but who do go on to an agricultural college, can most assuredly be justified.

Perhaps the critical point bearing on the question at hand was the finding in the Kansas study that vocational agriculture and science taken in combination in high school resulted in the highest mean grade point. Since agriculture can be taught and actually is being taught both as a science and as an art or as a combination of the two, perhaps there is an implication that it should be taught as a science at the high school level:

Perhaps we should be teaching "How Corn Grows" rather than " How to Grow Corn," and "How Nutrients Feed Livestock" rather than "How to Feed Nutrients to Livestock." If it is true that agriculture and science combined make the best preparation for a high school student who is going to study agriculture at the college level, can not this same combination equally benefit the young man who terminates his formal education with the high school diploma? Lathrop's[3] study showed that the high school course pattern which best equipped students to survive the first term in college and to earn a higher grade point average embraced 12 semesters of mathematics and science. This was true for students in agriculture, engineering, science and home economics. Today, when the average man in the street will argue that we should incorporate more science into the high school curriculum, perhaps we in agriculture should take immediate steps to remake vocational agriculture into what we could honestly call science program for the high school student. If we were to convert to a high quality science program in our vocational agriculture classes, such classes could provide superior background material for those high school students who contemplate college work in commerce, liberal arts or law. We could give breadth to the background of such students who in most instances are compelled to specialize early

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[3]Lathrop, Irvin T. Scholastic Achievement at Iowa State College Associated with High School Size and Course Pattern. Ph. D. thesis, 1958, Iowa State College. 218 p. Library, Iowa State College, Ames.

in their undergraduate careers. Conversely, we could provide the scientific background so urgently needed by students who will enter medicine, biology or agriculture at the college level, thereby making it possible for the colleges to eliminate introductory courses which are often of limited usefulness to bright students. This approach would allow more time for such students to take courses in political science and the humanities.

If vocational agriculture is to become a high school program in agricultural science, it will mean that there will no longer be the temptation for counselors to guide dull students into vocational agriculture classes. It will further mean that agricultural education curricula at the college level will require drastic revision. It will mean that the "how to do it," intensely practical part of the vocational agriculture program, will be carried out for those high school students who go directly into farming by means of the "young farmer classes." Such help will then be welcomed by them and will be more easily taught because of the greater monetary interest that the students will then have in the practical work given them.

The program that is being suggested could mean the elimination of the supervised farming project requirements of present-day high school vocational agriculture. It would necessarily mean that young men preparing to teach vocational agriculture in the high schools would follow an agriculture science curriculum in college with the practical part of their teacher training being given to them during supervised practice courses offered during the summer months. These summer programs might be thought of as somewhat paralleling the summer camp requirements of our accredited schools of forestry.

A high school program in agricultural science offers hope for emancipating the vocational agriculture teacher from the task of dealing with a disproportionate number of dull students who are currently being pushed in the direction of vocational agriculture at the high school level. It would offer to the vocational agriculture teacher the prestige of being a science teacher at a time and in a world in which science is highly revered.

The exciting possibilities for redirecting our vocational agriculture programs lead me to believe that there is a need for training in agriculture of secondary school students who do not expect to be farmers, but only if vocational agriculture adapts itself to the rapidly changing educational requirements of the space age.

IS THERE A NEED FOR TRAINING IN AGRICULTURE OF SECONDARY SCHOOL STUDENTS WHO DO NOT EXPECT TO BE FARMERS

Orville E. Thompson

In California we would be negligent in our duties as educators if we answered with anything but an overwhelming "yes" to the above question. In the same breath, we would have to admit that we have been training students in vocational agriculture for jobs other than farming for a number of years. This has been inescapable, even though this may be construed as taking liberties with the provisions of the Smith-Hughes law. I suspect other states would also have to admit they have been doing the same, perhaps however, to a lesser degree. We have only to look at the follow-up placement studies in the various states for our evidence.

There is no reason to be apologetic for what has happened, for this has become inevitable with progress in agriculture. Just as the farm has changed from a relatively independent self-sufficient unit to a specialized business dependent upon many others for services, so have the training requirements changed for persons preparing for careers in this big business of agriculture. We must not merely recognize this situation and think this change is only temporary; we can hope it will revert to the "good ole days", but it won't. This is progress, and we cannot stop it nor would we want to stop it. However, if we continue with our present pattern of doing little or nothing to bring our programs and objectives up to date, other agencies and institutions will be doing it for us and, if not directed, these changes could have disastrous results for vocational agriculture. We cannot afford to wait for the initiative to come from outside our ranks. The best way to protect what we all believe is good about vocational agriculture is to take action to develop a program in vocational agriculture that meets the needs of agriculture in a modern world.

One might legitimately ask why we should concern ourselves with preparation of agriculturists other than farmers when today our agricultural schools are not providing enough farmers to replace those expected to leave through death or retirement. There is not a simple answer. The route to farm managership or ownership is not a clear-cut path. In California at least, farms are being wholesaled by realtors on the same economic price level as other large businesses. Construction companies, professional people, investors, and presently established farmers look to land for security and are often able to pay prices far in excess of the current earning power of the land.

Where does this leave the young man with a desire to become a farmer but short on capital? Disappointed - yes, but not prohibited. In many cases he will have to modify his dream of owning a spread of his own but, nevertheless, there is still a place for him on this modern farm. In some cases it may mean he will be a full-time mechanic, head irrigator, manager-supervisor, full-time tractor driver, or machinery operator; or he may be the consultant on soil fertility for a number of farms. He may be a farm business manager or accountant. There are dozens of jobs he may obtain which satisfy his desire to be in agriculture but

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not necessarily as a farm owner. Is it realistic to hold to the principle of accepting into vocational agriculture only those who are preparing for farming? Certainly, we need to be concerned about training those who, through fortunate birth or convenient marriage, will come into farm of their own. Beyond this, however, there is an ever-increasing need for persons trained and interested in agriculture to man the many jobs which have arisen in conjunction with farming, either providing goods and services to farmers or handling the products of the farm. High school education in agriculture is the key for entry into a number of these jobs.

This general problem of who should be enrolled in vocational agriculture has been a concern of educators in California for many years and is possibly more acute in this state due to the dynamic nature of its agriculture. A recent study of 11,300 students enrolled in vocational agriculture in this state revealed that only 49 per cent intended to become farmers. This figure was consistent for all grade levels, yet only 6 per cent indicated they didn't plan to enter the field of agriculture. Obviously, the remaining 45 per cent are interested in employment in agriculture, but not necessarily farming. Should this group of some 5,000 students have been turned away from vocational agriculture because their objectives were for vocations in agriculture other than farming? Certainly not! Today, as never before, the agricultural industry needs people interested in agriculture who have farm experience and are sympathetic with problems of agriculture. California agricultural schools fall far short of training the 5,000 farmers needed annually for replacements, to say nothing of the numbers needed in agricultural research services, extension, teaching, and other related positions.

Another concern of training in agriculture in the secondary school, whether the student desires to become a farmer or not, is the preparation for higher education in agriculture. Studies in California show that about one-fourth of our vocational agricultural graduates enter college. Of this group, over two-thirds continue in agriculture. Of the 442 in the class of 1960 in agriculture in state colleges, 211, or 47 per cent, had at least three years of agriculture in high school. At the University of California at Davis, about 25 per cent of the agricultural students had a full program of agriculture in high school. Likewise, in the School of Veterinary Medicine, about 25 per cent of the students are former vocational agricultural students. One might rightfully wonder where these former agricultural students might have been had they been barred from vocational agriculture because their objective were not to become farmers. With the increasing emphasis upon science, it is reasonable to expect a number of the capable agricultural students would not now be in agriculture except for the interest sustaining influence of agriculture in high school.

There is need to be concerned that the high school program in agriculture also permits the student to meet the entrance requirements for college. In California we have the continuous battle of counteracting the rumor that the student who takes vocational agriculture cannot also meet entrance requirements for college. Originally, this may have been true. Today, however, with proper counseling, our students can take agriculture and still easily meet minimum college entrance requirements. Yet for public relations and possibly for better academic preparation, few of our vocational agricultural programs operating on a double period basis for the four years exist today.

More and more agricultural teachers are encouraging their brighter students to take a strong program of supporting courses. This does not mean that we are not proud of college achievements of our former vocational agricultural students. A study at Davis this past year showed that there was no significant difference in scholarship achievement between students who had three or more years of agriculture in high school and those prepared in a strictly academic curricula. When campus leadership activities are considered, the former Future Farmers were far superior. We are all proud of our former vocational agricultural students. I presume each of us can point with pride to instances of success he has achieved as a teacher. Still, as educators, we cannot by-pass our responsibilities of providing the best possible educational opportunities for each student. We will probably have to accept the fact that we cannot always continue to command as large a portion of the high school time of the student as we have in the past.

In summarizing what appears to be our present position regarding the need to train for occupations other than farming, let me make the following clear. We do not feel that vocational agricultural department can or should assume the responsibility for training for every specific vocation in agriculture. Where business education is needed to supplement agriculture, let the business department do it. Let's have the vocational agricultural department do what it can do best, i.e., provide an opportunity for real experience and proficiency in farming and other agricultural vocations, and let it continue as a potent force in sustaining the student's interest in agriculture as a career. This doesn't mean that we need to overhaul our program. It does imply, however, that we may need to modify our objectives and that we need to explore the possibilities of expanding the nature and scope of our present supervised practice program.

In considering the topic of training in agriculture for those other than farmers, it appears that we must continually keep one factor in mind, i.e., farming and agriculture are not synonymous terms. Our program has always been known as vocational agriculture, not vocational farming. If we are going to live up to our true responsibility as agricultural educators, we have to think beyond farming. We must think in terms of agriculture and, in so doing, provide educational opportunities for students who are interested in agriculture and who need farm training and experience regardless of whether or not they plan to farm. Our teachers have had to worry about this far too long. Why can't we legally permit them to continue to do what, in many cases, they have had to do anyway?

Instruction in General Agriculture In California Junior and Senior High Schools

Courses in general agriculture are offered in many California high schools. The number of classes and number of students enrolled are definitely on the increase. In many schools these programs are operated in conjunction with vocational agriculture. The major objective of general agriculture is to teach about agriculture while the vocational classes are designed to prepare students for farming.

Undoubtedly, the largest concentration of classes in general agriculture is in the junior and senior high schools in Los Angeles where such classes are currently conducted in 42 junior high schools and 26 senior high schools. Five of the latter schools also offer vocational agriculture. In the junior high

schools, every boy will have a minimum of nine weeks of instruction in general agriculture which includes experience in gardening. Each of the senior high schools offers elective courses; the most common subject area is ornamental horticulture. There is evidence that this pattern of instruction in agriculture is being adopted by other large metropolitan school systems in the state.

The following are excerpts from "The Instruction Guide for Gardening", Los Angeles City School Districts, Publication No. SC-449.

"Agriculture always has had a prominent place in the Los Angeles City Junior High School curriculum. Along with industrial arts, it is included in the exploratory sequence of practical arts subjects required of all boys in the B7, A7 and B8 semesters of the junior high school."

"For those youth who are interested, the field of agriculture presents a variety of future employment possibilities. Educational opportunities for further study of agriculture in senior high school and college are topics for class discussion."

OBJECTIVES OF JUNIOR HIGH SCHOOL AGRICULTURE

1. To satisfy that innate desire in every youth to produce, through natural growth, plants and animals.

2. To contribute to the enrichment of the community life by having better kept homes and gardens.

3. To afford individuals the opportunity to discover aptitude abilities and interests in the broad field of agriculture.

4. To recognize and use correct garden terminology.

5. To develop skill in the use of garden tools.

6. To offer an interesting field for the profitable use of leisure time.

7. To foster an awareness of the beauty of plant life in the home and its environs.

8. To develop an appreciation of agriculture as the physical foundation of society.

9. To gain an appreciation of the contribution of agriculture to an understanding of the natural sciences.

10. To offer an opportunity to apply the fundamentals of mathematics, science, and English.

11. To assist in a more intelligent selection, appreciation, and use of agricultural products.

SHOULD THE PROGRAM OF VOCATIONAL AGRICULTURE BE EXPANDED TO INCLUDE TRAINING FOR OCCUPATIONS IN AGRICULTURAL BUSINESS?

W. T. Bjoraker

Agricultural, social, educational and economic changes that are now rapidly taking place certainly have many implications for vocational agriculture. According to the basic law, vocational agriculture shall be designed for present and prospective farmers. If we in vocational education in agriculture are to carry out our responsibilities for vocational training, we cannot ignore this, nor can we in my opinion, honestly press for a change in this objective. However, as long as there has been vocational education in agriculture we have had people enrolled other than those becoming farmers who have benefited from the instruction that was designed for those going into farming. A number of these are now in agricultural business occupations. The National Conference on Agricultural Education held March 3-7, 1959, in Chicago, recommended the following restatement of the educational objectives in vocational agriculture:

Develop the ability to:

I. Manage a Farm Business
   - Establish and advance in farming
   - Production
   - Marketing
   - Soil and Water Management
   - Financing
   - Mechanization

II. Improve Living Conditions
   - Community
   - Home

III. Assume Leadership Roles
   - Community
   - County
   - State

Objectives in agricultural education must be realized out in the school communities where departments of vocational agriculture are located. Therefore, the program of vocational agriculture would be designed to develop proficiency in the work of the farm for those people engaged in or preparing to engage in farming. It is recognized that such training and counseling will contribute to the preparation for other agricultural occupations or further specialization in an agricultural college.

I take the position that vocational education in agriculture must still be designed for, but enrollment not limited to, present and prospective farmers. There are numerous occupations which require some measure of proficiency in farming. All young men who may become employed in such an occupation would and do profit from such a course in vocational agriculture.

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As desirable as it may seem, to train students directly for related occupations in agricultural business, I do not believe, in light of the greater need for trained farmers, that we can shift our vocational agriculture program design in order to cover agricultural business as well. We must strive to do a more effective job of vocational education in agriculture and at the same time cooperate in the development of an expanded program of agricultural education in our public schools to meet needs other than that for proficiency in farming. It is my concern that no one will be able to carry out the increasingly important task of training for farming if those of us in vocational education in agriculture become "splintered" by attempting to meet scattered, and in many cases low enrollment needs, such as green house operators, farm machinery mechanics, marketing, feed and seed retailing, etc. It is my belief that this would have to be done at the cost of neglecting our first responsibility.

SHOULD VOCATIONAL AGRICULTURE BE EXPANDED TO INCLUDE TRAINING for OCCUPATIONS IN AGRIBUSINESS?

Carl M. Humphrey

I am not sure of the exact meaning of this subject - Discussing Agribusiness is about like discussing family size farms and part-time farmers - no two people agree what the term actually implies.

If we mean by the term "Agribusiness" - the business of farming, which has many ramifications, then certainly it is not only included in vocational agriculture but It Is vocational agriculture.

If "Agribusiness" means the occupations involved in or evolving from all agricultural pursuits, then it is quite a different story, and certainly is not and cannot be a part of a truly vocational education program in Agriculture.

Too many people who seem to be writing and talking about what vocational agriculture is or should be, are people who do not understand what a real program of vocational agriculture is or should be.

All agricultural education in high school need not be vocational. Therefore, it would seem feasible, possible and logical, to give instruction in the "Agribusiness" phase of our economy in such non-vocational training in agriculture. Since during the past 25 years I have spent my time in developing and conducting vocational programs in agriculture, I am not in a position to describe to you this afternoon how such a program of non-vocational agriculture should be planned and conducted. I believe a need exists for such a program but I would hasten to say I believe even more strongly that such training has no place in vocational agriculture.

"To train present and prospective farmers for proficiency in farming" is a familiar phrase for which you have a very deep appreciation. I hope it will retain this important place in your thinking as you assist in evaluating and in the replanning of existing and planning of future programs in vocational education in agriculture.

I, like the rest of you, have heard and read a lot about R. O. programs as a panacea for poor programs of vocational agriculture in our public schools. The best I have been able to learn is that R. O. stands for vocational agriculture programs which have "run out" and are no longer serving the community, Therefore, we adopt something different and out of the realm of vocational education in agriculture to replace vocational agriculture and try to convince the public we are still conducting a good program of vocational agriculture.

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In order to meet the needs for training in vocational agriculture if our public schools today, we need not change our main purpose of vocational training in agriculture. We do need to change our course content and perhaps bring our objectives up to date in order to keep up with the changes in agricultural technology. The vocational agriculture curriculum has changed greatly and will change more in the future. For example, at one time we studied field crops one year and livestock enterprises another, and in some cases farm mechanics another. We have long since quit this approach and do our teaching around the supervised farming programs of the students enrolled. The home farm is, in fact, the laboratory. The on-farm instruction is the most effective instruction given by the vocational agriculture instructor, just as the laboratory work is the most effective phase of instruction in science.

Vocational agriculture must continue to grow as an educational instrument for those people who have entered, or who are preparing to enter, farming. Enrollment need not necessarily be limited to those.

In discussing the role of vocational agriculture in our public schools today, too many of us think about and discuss only the high school program. We should be putting more emphasis on our post high school program, even though we do not have enough boys enrolled in our high school vocational agriculture classes to supply the needed farm operator replacements.

It seems our friends in Minnesota have hit upon a very pertinent idea in a report dated February, 1959, entitled - Is Vocational Agriculture Meeting the Need for Farmers? I quote "with a farm replacement ratio of only one vocational agriculture graduate to four of those who start farming, and with only 10 per cent of available adult and young farmers enrolled in our classes, may it not be that in seeking new areas to serve we will 'lose the substance of what we have in reaching for the shadow'. Are we overlooking 'Acres of Diamonds' in our own back yard?"

Many changes in agriculture which have occured have been mentioned here today. These changes will mean a more important role for Vocational Agriculture. In view of these changes, it becomes obvious that the quality of training in vocational agriculture must be higher than ever before.

Some folk seem to feel that the "Educational Objectives in Vocational Agriculture" should be changed. We in vocational agriculture feel they should be modified. We would suggest that they read somewhat like this. *

"Develop the ability to -

1. Manage a farm business - which would include

   (a) becoming established and advance in farming (b) efficient production methods (c) effective marketing (d) sound soil and water management practices (e) Understanding and using proper financing, and (f) farm mechanization.

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* Report of National Conference of Supervisors and Teacher Trainers of Vocational Agriculture. Chicago, March 2 - 7, 1959.

2. Improve living conditions

   (a) on the farm (b) in the home, and (c) in the community.

3. Assume leadership roles

   (a) in the community (b) in the county, and (c) in the states

Objectives in vocational agriculture must be realized in the communities where departments of vocational agriculture are located. Therefore, the program of vocational agriculture should be designed to develop proficiency in the work of the farm for those people engaged in or preparing to engage in farming. It is recognized that such training and counseling will contribute to the preparation for other agricultural occupations or further specialization in an agricultural college.

In view of the statement quoted previously from the Minnesota report and other recent studies, provision should be made at all levels for a very large and rapid increase in the number of young and adult farmers enrolled in vocational agriculture programs, throughout the country. It is believed that a larger portion of the teacher's working day should be spent working with farmers.

As a guide for enrolling and continuing high school classes in vocational agriculture, it is recommended that emphasis be given intent and quality of performance of individuals while enrolled in vocational agriculture. Actual experience in becoming proficient in farming for all those enrolled in high school classes of vocational agriculture is necessary.

Yes, we need to change and improve our vocational agriculture programs in our public schools in order to attempt to keep abreast of our rapidly changing atomic age agriculture.

These improvements should not include instruction specifically for agricultural occupations other than farming. My concluding reasons for this statement are:

1. Vocational agriculture instructors are not yet reaching all the present and prospective farmers.
2. Most vocational agriculture instructors have more now than they can get done.
3. Colleges of agriculture are providing or planning to provide necessary training for agricultural occupations other than farming.
4. Most employers of people for work in agricultural occupations want college graduates.
5. Representatives of commercial companies have said they prefer to hire boys and young men without specific training because they prefer to give the training for the specific job they want them to do.

In order for vocational agriculture to continue to be a dynamic part of our public high school program, it must become MORE VOCATIONAL and not LESS.

SHOULD THE OBJECTIVES OF VOCATIONAL AGRICULTURE BE CHANGED TO INCLUDE TRAINING OF STUDENTS FOR AGRI-BUSINESS OCCUPATIONS?

Chester S. Hutchison

During recent years we have heard many comments and read columns of news about the need for changes in our educational programs. Science and engineering have both been mentioned as areas needing more emphasis in the training of our youth.

The high schools have been criticized for their failure to turn out students who are proficient in mathematics, English, and the sciences. I want to commend the leaders in vocational agriculture for their foresight in developing a program with the student as the focal point. Throughout the years I have observed a change of emphasis from teaching animal science, crops, engineering, management and shop to a program that is designed to bring about the highest degree of individual development.

My remarks are based upon my experience as a teacher, administrator, supervisor, teacher trainer and more recently as a placement officer for our college. I am enthusiastic about the potential possibilities of vocational agriculture, and believe the future is encouraging for the program when it is developed to meet the needs of local communities.

One prominent national figure recently wrote me that "Vocational agriculture can well be treated as a terminal program and also serve as an intermediate step in formal education in agriculture, presumably on a college level". I am sure this individual must be lost in the mire of the formal or traditional education. This type of thinking can spell disaster and result in confusion on the part of our younger teachers.

The primary objective of vocational agriculture is to assist students in learning to solve farm problems, develop programs to become established in farming and to help those presently engaged in farming (or production) to improve their efficiency. Sounds simple, doesn't it? How do you attain an objective? Simply by changing the attitude or behavior of the student. A desirable change in attitude and behavior can only be brought about by facts, knowledge and skills.

The Smith-Hughes Act states: "To receive the benefits of such appropriation --- "That the controlling purpose of such education shall be to fit for useful employment. That such education shall be of less than college grade and be designed to meet the needs of persons over 14 years of age who have entered upon or who are preparing to enter upon the work of the farm or of the farm home."

A state plan for vocational agriculture may say that "Vocational education in agriculture under the state plan is to be designed to meet the needs of the work of the farm or farm home. This training may be provided in:

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1. Day classes for in-school youth who are preparing for farming.

2. Young farmer classes for out-of-school youth who are establishing themselves in farming.

3. Adult farmer classes for those who are improving their proficiency in farming.

How can an educational program be terminal in high school when the state plan is so broad and flexible?

The farmer is a business man among business men. He must be educated, confident, and influential. His training, whether acquired formally or informally, must include a knowledge of science, mathematics, economics, business, accounting, and humanities, as well as technical courses in agriculture. He is forever seeking new information to improve his business.

We must be concerned with the training of the whole farmer since the declining farm population is resulting in automation, mechanization with better scientific and business practices as farm sizes increase.

The instruction that is "designed for those who have entered upon or are preparing to enter upon the occupation of farm" is also some of the best possible basic instruction for a wide variety of related occupations.

With the present trend in the number and size of farms, by 1980 we will have approximately 2 1/2 million full time operators in the United States. If the average service span for an operator is 40 years, we will need 60,000 new operators each year. Vocational agriculture has its hands full to supply its share of well-qualified young men with the technical, scientific, mechanical and business training to be successful in farming. Vocational agriculture need not change its objectives, but must face up to the fact that a large number of the students taking vocational agriculture in high school enter occupations other than farming. We have been told that 85% of the rural youth of the future will need to find their careers in some occupation other than farming.

I would not recommend that the "objectives of vocational agriculture" be changed nationally, but that each state determine its plan on the basis of need. The basic state law in the Commonwealth of Massachusetts defines vocational Agriculture "as fitting pupils for occupations connected with agriculture, the care of domestic animals, forestry and other wage earning or productive work on farm land".

To be realistic, a good vocational agriculture program during the high school years provides a broad basic foundation that prepares for non-farming as well as for farming.

I am confident that administrators and teacher trainers of vocational agriculture are aware of the need for their teachers to have more training in guidance. The preparation of occupational information for use by agricultural teachers and counselors is one of the greatest challenges facing the school officials. The administrative provisions of vocational education provide for vocational guidance

under the George-Barden act. It is possible for the several states and communities to provide teachers with information to aid their students in making wise decisions in selecting vocations and making occupational adjustments as needed.

The students of vocational agriculture are a part of the local academic program which also trains students for college, commercial work, homemaking and industrial employment. The high school is not a terminal training program, but a basic preparatory program that prepares entrance into farming or any one of many other careers.

Many of the companies and organizations visiting The Ohio State University to interview graduates and graduating seniors are asking for young men with farm experience and broad basic training in agriculture, as well as mastery of the fundamentals of communication (English, mathematics, speech and science).

We are pleased with the academic accomplishments of our students who had vocational agriculture in high school. A study of 429 entering freshmen in 1953 completed in June, 1957, showed that 23%, or 98, graduated from agriculture at the end of four years. Twenty-six per cent failed to return; 14% were still in agriculture; 12% dismissed; 9% withdrew; 6% in Veterinary Medicine; and 10% transferred to other colleges.

Of the students who graduated, the 39 who had vocational agriculture in high school accumulated a point-hour ratio of 2.78 compared to 2.61 for the 59 students with no vocational agriculture training in high school. In selected subject matter areas the students with vocational agriculture had slightly higher grades in technical agriculture, botany, mathematics and chemistry, but lower grades in English and zoology.

Training in vocational agriculture should be broad enough to acquaint the student with the importance of agriculture. A strong foundation training program in production along with farm experience puts one in tune with the whole business of agriculture. Forty per cent of all gainfully employed persons are working in agriculture and closely allied fields.

I am convinced that our greatest need in vocational agriculture is more guidance with alert well-trained teachers. Changing the present objectives of vocational agriculture will not improve the quality of the program.

SHOULD THE OBJECTIVES OF VOCATIONAL AGRICULTURE BE CHANGED TO INCLUDE TRAINING OF STUDENTS FOR AGRIBUSINESS OCCUPATIONS?

Mark Nichols

Over 30 years ago when Glenn Frank was associated with the University of Wisconsin, he had a syndicated column in one of our state newspapers. I distinctly remember reading his article one day which carried a heading "Are you Guarding Dry Paint?" According to this story, King Louis XV of France went into a remote area of the palace garden and unwittingly sat on a freshly painted bench. Not wishing others to have this unpleasant experience, he ordered a guard to patrol the bench. The paint undoubtedly dried in a few days, but the King forgot to rescind the order. The bench was guarded daily for the rest of his life. Years after the ascendency to the throne of his successor King XVI, someone asked the King why the bench was patrolled. The king did not know. The guard likewise did not know because several guards had come and gone since the order was given. No one could answer except that it had been customary as long as any of the servants could remember. Undoubtedly we are guarding much dry paint in vocational agriculture. In many instances, both course content and instructional procedures can be improved. Yet my answer to the question,"Should the objectives of vocational agriculture be changed to include training of students in agribusiness occupations," is no.

If the question were changed to read, "Should the objectives of vocational agriculture be changed to include training of students about agribusiness occupations?" - my answer would be yes.

The vocational agriculture teacher is concerned primarily with teaching Future Farmers, Young Farmers and adult farmers in methods of increasing their farming proficiency. This is a big job that challenges the abilities of the best trained teachers in the profession. It often becomes too big a job for many vocational agriculture teachers to do well. To dilute the program with another primary objective is neither sound nor advisable.

It is recognized that a high percentage of Future Farmers do not become farmers. We have been keeping records in my state for some time as to what happens to them when they leave high school. They may be classified at this stage in the following catergories:

1. Farmers (generally farm workers or partners)
2. College students or students in trade or technical schools
3. Workers in occupations related to agriculture
4. Workers in non agricultural occupations
5. Members of the armed services

Some of these Future Farmers eventually get into agribusiness but at occupational levels where post-high school training is for the most part a requirement.

I believe that vocational agriculture may offer an exceptionally fine exploratory experience for farming and related occupations including agribusiness,

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agrimechanics and the agricultural professions. Two of the most important decisions which most every man makes in his lifetime is the selection of a mate and determining how he is going to make a living. When these decisions are wisely made, the individual has established the framework for living a happy life. Most all of the other decisions of adults fall within the fence lines of these two.

Probably the most important contribution a high school can make to any student is to aid him in the making of a wise occupational choice. This is no laissez faire matter, nor can it be done vicariously. It becomes an outcome of a good guidance program with the student himself making the choice. Administrators, counselors, parents, and teachers make up the chief components of a good guidance team of advisers. One facet of an adequate guidance program is the imparting of occupational information to students. This must be properly done if students either in their high school year or in subsequent years, make wise occupational choices. If it is well done, most students will have made wise occupational direction choices before they leave high school.

The guidance counselor at best can impart only a limited amount of occupational information. Each high school teacher has an opportunity to teach about the occupations in his instructional field. Here is where the vocational agriculture teacher comes into focus with regard to agribusiness occupations. He should have adequate occupational information ABOUT the various agribusiness jobs. This information should include the following about each job or job cluster.

1. The nature of the work
2. Working conditions
3. Job outlook
4. Opportunities for advancement
5. Monetary rewards
6. The kind and amount of training necessary for job entry
7. Sources of additional information

I believe that most vocational agriculture teachers have the opportunity and indeed the responsibility for imparting much more job information than they are now doing in their vocational agriculture classes. I believe they can well afford to spend from 10 to 20 per cent of their instructional time each year to this activity concerned with farming occupations and occupations related to agriculture.

Unfortunately there is not too much information about agribusiness with the above named details. What little information that is available, is of a general nature; sadly lacking in valid specifics so essential as a good resource aid. "Careers in Agriculture" and "I Have Found My Future in Agriculture" fall into this generality category---good promotional brochures but woefully lacking as good teaching resources.

Leaders of the Iowa Agricultural Adjustment Center and in the schools of agriculture of the various agricultural colleges may well afford to spend some time in getting out adequate materials on agribusiness and other agricultural occupations for use by high school counselors, vocational agriculture teachers, vocational agriculture students and parents. This should prove one of the most effective means in "proselyting" prospective students for the schools of agriculture in state agricultural colleges and universities.

Vocational agriculture teachers cannot be expected to teach the specific business facets of agribusiness to high school students who want participating experience in this field, while in high school. They should be encouraged to register for distributive education courses. These, of course, are not available in small rural high schools.

I believe however that one important training phase of agribusiness is effective participating experience in farming. A good program of vocational agriculture for three or four years provides this experience. And let us not forget that for the Future Farmer boy who goes to college and graduates in an agribusiness field, this vocational agriculture training is probably the last participating farming experience he will have. This is also the case for the Future Farmer who is employed in agribusiness upon leaving high school or upon returning from the armed services. These boys may get the business training in agribusiness on the job, or in distributive education extension classes when they leave high school, but they won't get the farm experience training. This then is an important vocational contribution which vocational agriculture offers to Future Farmers who go immediately into agribusiness or who get post-high school training and then enter this field.

We are going through a period when science and mathematics are receiving great emphasis both at the high school and college levels. Like the styles in automobiles and women's hats, educational waves of emphasis come and go. May we not be stampeded into counseling good students out of programs of vocational agriculture with their applied science and mathematics instructional offerings. Such boys with vocational agriculture backgrounds are doing well scholastically in college. It is hoped that high school teachers through their instruction in occupational information about jobs in farming, agribusiness and professional agriculture including research, will make an appeal to many intellectually gifted students to the extent that goodly numbers will become vocationally interested in these fields. Agriculture offers a challenging opportunity for the best brains in rural youth.

In this "beatnik age" when so many adults are reverting to adolescent behavior for the sake of being different, may it not be said of those of us engaged in agricultural education that we too are following the "beatnik" trail. We have a good program in vocational agriculture, and with a few changes it can be made better. Our major problem is to let the world know how good it is and also to sound the call from the house tops that agriculture is changing but not dying. In this activity, may vocational agriculture workers and those engaged in agricultural instruction at the college level, work cooperatively together as a team!

SHOULD THE OBJECTIVES OF VOCATIONAL AGRICULTURE BE CHANGED TO INCLUDE TRAINING OF STUDENTS FOR AGRIBUSINESS OCCUPATIONS?

E. V. Walton

Vocational agricultural education as conducted in the high schools of the nation has always had a realistic approach to its purposes. In fact, the common sense of vocational agriculture teachers has often forged ahead of outmoded definitions and statutory regulations in order to provide practical realistic training geared to today's progress. If we revise the definition of purpose of vocational agriculture in terms of what is actually being done -- and commendably so -- we shall say that the purpose of vocational agriculture is to assist young men to become established in agriculture. Please note the use of the word agriculture. It is not now-- nor has it ever been synonymous with "farming." Farming happens to be a very essential component of agriculture, but it is exactly that. A component -- a part -- one of the pieces or cogs in the complex technology of agriculture.

When 40 percent of the people of this nation are employed in farming and related agricultural occupations, it is a matter of simple arithmetic to deduct the 11 percent engaged in farming to perceive that we have another 30 percent who have a very real and vested interest in agriculture.

It would not be realistic to assume that vocational agriculture should offer training to all of these people in their many and varied occupation, but vocational agriculture definitely can and should make a contribution to the preparation of many of them.

It becomes necessary for us to critically examine some commonly accepted assumptions. It has been assumed that if vocational agriculture provides training for "related occupations and professions" that a markedly different find of training is necessary. This is not necessarily so if we limit and define "training." Specific training cannot be provided for a dozen different occupations. Much of the training which should be given a young man in preparation for establishment in farming is also common across the board to a great many related occupations and professions. Training for related occupations and professions merely requires a bit more broadening of the base commonly used for training for establishment in farming.

We broaden our scope and expand our responsibilities when we assist young men to become established in agriculture in its broad term. Let us say then that preparation for related agricultural occupations and professions is an area of opportunity and responsibility.

Vocational agriculture is not missing its purpose when it assists young men to become established in agriculture. Is the young plant pathologist delving into the multibillion dollar economic loss due to plant diseases established in agriculture? Is the agricultural journalist who reaches thousands of people with his interpretations of agriculture established in agriculture? Add to these and others in professional categories the cattle

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buyer, the insecticide salesman, the doctor of veterinary medicine, the fertilizer salesman, the petroleum products distributor, the florist and nursery operator, the hatchery man, the forestor, and hundreds of other people who engage in related occupations. I doubt that any thinking individual could seriously question the validity of their establishment in agriculture.

How can vocational agriculture provide training for related agricultural occupations when there are literally thousands of these fields? How can vocational agriculture provide training for a young man who may not know what fields are open to him because he does not know what the fields are?

Here are some things vocational agriculture can and should do to provide training leading to establishment in agriculture.

1. Provide for a comprehensive exploration of what agriculture is and what the opportunities are.

2. Provide training in the characteristics of desirable employment.

3. Provide guidance to aid the student to determine his interests, aptitudes, and abilities.

4. Provide training in personal qualities for job success.

5. Provide training in the demands of professional careers in agriculture.

6. Provide the technical training commonly given for establishment in farming. Regardless of the career to be followed, this type of training still constitutes one of the best basic backgrounds possible for a youth to receive.

In order to broaden the base of vocational agriculture to encompass an expanded challenge, certain revisions must be made:

1. Additional training in guidance at both the undergraduate and graduate level must be provided for vocational agriculture teachers.

2. Vocational agriculture curriculums must be revised to provide a common core of scientific agricultural principles.

3. Greater emphasis must be given to economics and management principles and practices.

4. Resource materials and personnel must be utilized to a greater extent in the field of agricultural guidance and exploration.

5. On-the-farm or on-the-job placement should be required in preference to poor or mediocre supervised farming programs for these students not planning to become established in farming.

KANSAS GRADUATES OF VOCATIONAL AGRICULTURE IN LOCAL FARM-RELATED BUSINESSES

Raymond J. Agan

INTRODUCTION

A pilot study was sponsored by the Agricultural Experiment Station of Kansas State University during the 1958-1959 school year to determine any trends which might be prevalent in the successfulness of Kansas graduates of the secondary school curriculum in vocational agriculture who are employed in businesses related to farming. At the time of the writing of this report complete tabulation of the data had not been made; therefore, the report is tentative and incomplete in some areas.

Three Kansas centers were selected at random. The only prerequisite of a center was that it have a four year program of vocational agriculture, that the instructor have at least five years of tenure, and that opportunity be present in the community for employment in businesses related to farming.

The hypothesis of the study was that graduates of vocational agriculture perform successfully in farm-related businesses and credit their training in vocational agriculture as being influential in their success.

Trained interviewers contacted the high schools in the three selected centers to determine the graduates in the vocational agriculture curriculum during the period of 1948 to 1958 who were employed in local farm-related businesses. No attempt was made to contact those who had moved from the community. Neither was an attempt made to compare the graduates in vocational agriculture with any other group. Thirty-eight young men were located who had graduated in vocational agriculture since 1948 and were presently employed in farm-related businesses in the community where they attended high school. The employers of the men were then interviewed followed by interviews with the employees. Since the personal interview technique was used, all 38 men were included in the sample.

FINDINGS

The Men Studied

Of the 38 men included in the study 24 per cent of them worked in food and/or feed processing and handling, 55 per cent worked in the manufacture and service of farm equipment, 8 per cent worked for construction companies serving rural areas and 13 per cent worked for rural public service. There appeared to be no consistent differences existing in the educational background among the members of the four groups so for the purpose of a preliminary report of the pilot study, all were grouped together as agri-business.

The employers of vocational agriculture graduates ranked 16 (45%) of the 38 men as skilled workers; 10 (26%) were semi-skilled; 5(13%) were supervisory; 3 (8%) were rated as highly skilled; and the same number (3) were rated as managerial. One was rated as a non-skilled employee. The employers were asked

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what special skills were needed by the employees. Agricultural skills were mentioned four times, mechanical skills 24 times, meeting the public 23 times, and making decisions 22 times.

Forty per cent of the 38 men were graduated from high school within two years of the time of the study and had worked for the same company since that time. Five per cent of the men held tenure with the same company for 9 to 10 years. Promotions were frequent among the employees who were vocational agriculture graduates. Fifty per cent of the men had received one major promotion since their employment and 34 per cent had received from two to five promotions.

The Employer's Opinions of the Men

An employer's rating scale was devised and checked for reliability with a campus committee trained in industrial psychology. In Table I, the employers' ratings of the men included in the study are summarized. The men were rated highest in character and reputation with dependability including attendance, punctuality and steadiness on the job rating second and quality of work including neatness, accuracy and quality of work as third. Supervisory ability was rated last by the employers and given a score of slightly above average. When all 38 men were considered, the average scores given by the employers were well above average. The mean rating given was $+.90$ on a possible scale of $-2.$ to $+2.$ Zero was considered an average score.

The Employee's Opinion of their Training in Vocational Agriculture

In Table II is presented the responses given by the employees' concerning particular phases of the program in vocational agriculture which they credit for helping them in their present work. They were encouraged to check only the one or two they felt were most helpful or if they felt no phase of the program was of particular assistance, to check the "none" column. Considerable data is contained in Table II which may indicate patterns of thinking which existed among the graduates in vocational agriculture.

In Accuracy of Work 55 per cent believed that farm mechanics skills were of the greatest help. Employers rated their men $+$ 1.18 out of a possible maximum of $+$ 2. on this trait.*

In Organization of Work 41 per cent credited future farmer activities first and 26 per cent rated agricultural classroom activities most helpful. The employee's rating given by their employers was $+$ .76 on a scale of -2 to $+2$.*

Neatness of Work was one of the highest ratings given ($+1.21$)*by the employers and responses given by the employees as to sources of training which helped them develop work neatness were divided between the classroom and farm mechanics skills, each getting 29 per cent of the employees' votes.

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*See Table I

On the Thoroughness of Work 36 per cent felt that the agricultural classroom activities were most helpful with 14 per cent giving votes to each farm mechanics skills and supervised farming. Employers gave a strong rating of + 1.13 on this trait.

Farm mechanics skills received favorable votes from 35 per cent of the employees as being helpful in putting out a Volume of Work. Employers rated the men at a score of + .79 on ability to produce a volume of work.

In regards to Knowledge of Their Work, 39 per cent felt that farm mechanics had been most helpful and were rated + .84 by their employers. This seems to be a logical response in view of the fact that 63 per cent of the men worked in the manufacturing or construction phases of Agri-business.

For the best training in Carrying Out Instructions employees rated classroom (30 %) and Supervised Farming (28 %) as being most helpful and were given a rating of + .97 by their employers.

When it came to Cooperation With The Supervisors, the training received through supervised farming received 34 per cent of the votes. The employers' rating was + 1.05 on the scale of -2 to +2. On Cooperation with Fellow Workers, and Company Policies, Future Farmer activities received 41 per cent and 35 per cent of the votes respectively as being the most helpful training. The employers' rating was lowered to + .79 and + .90 on these phases of cooperation.

On Personal Appearance 53 per cent felt that FFA had been the most helpful training. The employers' rating was + .83 on personal appearance.

Honors for training in Self Confidence was divided between judging and contests (26%) and farm mechanics (23%). A rating of + .95 was given by employers on self confidence. Farm Mechanics was again highest in indications by employees (26%) in relationship to their Ability to Advance with FFA and supervised farming in second places each having 20 per cent of the indications.

Employers rated the 38 men highest in character and reputation giving a score of + 1.41. The FFA received the vote of 53 per cent of the men as giving most influential training in this respect. Fifty-two per cent of the employees rated the agriculture classroom as giving most effective training on their dependability in attendance and nearly the same (49%) gave credit to the agriculture classroom for punctuality training. Credit for training in Steadiness on the Job was spread between supervised farming, farm mechanics, and agriculture classroom each receiving 29, 29 and 26 per cent of the votes respectively. Employers' ratings on attendance, punctuality, and steadiness on job were comparatively high being + 1.33, + 1.24, and + 1.39 respectively.

Training for Initiative was credited to supervised farming by 24 per cent of the respondents and to FFA by 22 per cent. A rating of + 1.03 was given by employers in initiative.

Credit for training in Judgment went to judging and contests (41%). The employer's rating was + .77. Employers rated the 38 men lowest of all characteristics in supervisory ability (31%). Employees credited supervised farming (36%) and farm mechanics (24%) as giving the best training in this area.

The employees were asked some general questions about their high school training and their thinking about college training. The results of eight such questions are listed in Table III.

There seemed to be quite general satisfaction on the part of the graduates with their high school training. Averaging the responses to all six questions 75 per cent of the graduates felt that their training had been adequate. However, on the question relating to the help college training might have given them on their present job, 63 per cent felt it would have been an advantage. As to college helping them get a job more to their liking the responses were divided half yes and half no indicating a degree of satisfaction with their present work.

TABLE I
EMPLOYERS' OPINIONS OF EMPLOYEES
WHO WERE GRADUATES IN VOCATIONAL AGRICULTURE

CHARACTERISTIC OF EMPLOYEE'S WORK	EMPLOYERS' RATING -2= Poor -1= Fair 0= Average 1= Good 2= Very Good			
	Center 1	Center 2	Center 3	Average
QUALITY OF WORK:				
Accuracy	.89	1.19	1.46	1.18
Organization	.56	.60	1.13	.76
Neatness	1.22	1.19	1.21	1.21
Thoroughness	1.00	.93	1.46	1.13
GENERAL				
Volume of Work	.56	.80	1.00	.79
Knowledge of Work	.89	.69	.93	.84
Carrying Out Instructions	.78	1.13	1.00	.97
Use of English Language	.33	.75	.79	.69
Use of Written Communications	.33	.75	.77	.62
Ability to Use Math	.67	.87	.92	.82
Ability to Apply Science	-.29	.70	.92	.44
Ability to Apply Mechanics	.78	1.00	1.15	.64
Ability to Apply Business Principles	.25	.61	1.00	.62
Would College Training Help do a better job?	.67	.81	.50	.66
COOPERATION				
With Supervision	1.00	.94	1.21	1.05
With Fellow Workers	.67	.56	1.14	.79
With Company Policies	.78	1.12	.79	.90
PERSONAL ATTRIBUTES				
Appearance	.67	1.12	.71	.83
Self Confidence	.78	.94	1.14	.95
Efforts for Self Advancement	.78	1.00	1.07	.95
Character and Reputation	1.22	1.50	1.50	1.41
DEPENDABILITY				
Attendance	.89	1.38	1.71	1.33
Punctuality	.78	1.43	1.50	1.24
Steadiness on job	1.00	1.47	1.71	1.39
INITIATIVE	.89	1.21	1.00	1.03
JUDGMENT	.44	.93	.93	.77
SUPERVISORY ABILITY	-.11	.71	.64	.31

TABLE II

ASSISTANCE OF VOCATIONAL AGRICULTURAL TRAINING TO PRESENT WORK OF GRADUATES

WORK ITEMS TO BE EVALUATED	Vocational Agriculture Helpful Yes %	Vocational Agriculture Helpful No %	VOCATIONAL AGRICULTURE TRAINING: Supervised Farming (Projects)	Future Farmer Activities	Agricultural Class-room Activities	Farm Mechanics Skills Taught	Farm Operation Skills Taught	Judging and Contests	Public Speaking and Parliamentary
QUALITY OF WORK:									
Accuracy	94	6	9	0	19	55	3	11	3
Organization	95	5	8	41	26	10	8	2	5
Neatness	81	19	9	21	29	29	3	3	6
Thoroughness	90	10	14	9	36	13	9	9	9
GENERAL									
Volume of Work	79	21	21	6	18	35	18	2	0
Knowledge of Work	90	10	2	5	23	39	18	11	2
Carrying out Instruction	92	8	28	9	30	12	9	9	3
CO-OPERATION									
With Supervision	91	9	34	12	28	4	10	10	2
With Fellow Workers	89	11	2	41	16	21	5	10	5
With Company Policies	74	26	14	35	24	10	0	7	10
PERSONAL ATTRIBUTES									
Appearance	76	24	2	53	12	6	0	9	18
Self Confidence	78	22	6	14	3	23	14	26	14
Ability to Advance	83	17	20	20	11	26	9	11	3
Character and Reputation	83	17	12	53	12	0	2	9	12
DEPENDABILITY									
Attendance	68	32	11	26	52	11	0	0	0
Punctuality	71	29	7	30	39	7	0	7	0
Steadiness on Job	72	28	29	0	26	29	13	3	0
INITIATIVE	79	21	24	22	16	19	0	5	15
JUDGMENT	81	19	7	0	23	13	13	41	3
SUPERVISORY ABILITY	79	21	36	18	9	24	2	2	9
MEAN	17.75	82.25	14.75	20.75	23.10	19.30	16.80	9.35	5.95

TABLE III

ADEQUACY OF HIGH SCHOOL PROGRAM FOR WORK

ITEM	RESPONSE			
	Yes		No	
	N.	Percent	N.	Percent
1. Use of the English Language	28	74	10	26
2. Ability to communicate in writing	28	74	10	26
3. Ability to use mathematics	34	89	4	11
4. Ability to use science	24	63	14	37
5. Ability to do mechanical jobs	32	84	6	16
6. Ability to apply business principles	25	66	13	34
7. Would a college education help you on your present job	24	63	14	37
8. Would a college education have helped you get a job more to your liking	19	50	19	50

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATION PROGRAM OR AS AN INTERMEDIATE STAGE IN FORMAL EDUCATION IN AGRICULTURE?

Ralph A. Benton

The world of work presents many problems of concept and definition, most of which arise from tradition and are resolved by common usage. These differences have resulted in various concepts of vocational education.

The passage of the Smith-Hughes Act in 1917 gave rise to a concept that vocational education is education in certain specified subjects and more frequently subjects confined to the secondary school.

More specifically, the federally aided program in vocational agriculture is designed to train present and prospective farmers for proficiency in farming. Organized class instruction is provided in various crops and livestock enterprises, farm management, farm mechanics, soil conservation, and other fields of agriculture on the basis of the agricultural needs of the students enrolled.

One of the conditions of the Smith-Hughes Act is that the funds provided for vocational instruction may be used only for education which is "of less than college grade." Two sub-conditions important to our discussion today are (1) admission is based upon the ability of pupils to profit by the instruction offered rather than upon the possession of secondary school credits required for college entrance; and (2) the instruction is terminal in nature and not a part of a course which is to be continued in a college or other higher institution.

Thus, it is pretty well established that from the beginning, vocational education in agriculture was designed as a terminal education program. As such, the accumulated record of accomplishments by vo-ag students, since the inception of the program, is tremendous. However, in the light of today's economic and social changes in farm life due to the rapid advances in science and technology, it is of considerable importance to examine the vocational agriculture program at this time.

The remainder of my comments will be directed towards the consideration of vocational agriculture as an intermediate step in formal education in agriculture.

I should like to use certain facts about Southern Illinois as a background for this discussion.

Southern Illinois is characterized by farms which are much smaller, and the average farm income is considerably smaller than in other parts of the state. The soil is generally lacking in fertility and is characterized by a clay-pan that assumes a rock-like quality in periods of dry weather.

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In 1955, certain sizes of farms were more numerous in the southern 31 counties of Illinois. Approximately 30 per cent of all farms are under 50 acres; 35 per cent are 50 to 140 acres in size; 25 per cent are from 140 to 260 acres; and only 10 per cent are over 260 acres in size.

Thirty-two per cent of all farm operators worked part-time off their farms, and 13.5 per cent of the farmers worked more than 250 days off farms. The average number of workers, including family and hired labor for these counties, was 1.5 men. Only 4 per cent of the farms hired labor.

Deyoe[1] of the University of Illinois Agricultural Education staff found in a recent study of part-time farming in Illinois that in 1954, over half of the commercial farms (farms with a value of sales of farm products amounting to $1200 or more) in five southern coal-mining countries, received less than $2500 from the sale of farm products, compared to less than one-fifth of the commercial farms in the state as a whole.

In further examination of the 16 southern-most counties of Illinois, we find 41 departments of vocational agriculture in operation. The enrollment in these departments in 1958 varied from a low of 18 to a high of 75 with an average of 37 per department.

In a study we now have underway involving these 41 departments, returns from approximately one-third of them to date reveal that 26.48 per cent of the graduated seniors over the past four years are engaged in farming, either for themselves or in some kind of partnership. In this same period of time, 53.0 per cent of the graduated seniors started to college leaving 20.52 per cent to seek employment, join the armed forces, or to loaf.

This same study is concerned with employment opportunities for the vo-ag graduate who does not begin farming, and the opportunities within his home community, county, and area are practically nil. He is compelled to leave for the larger cities, particularly St. Louis, Peoria, and Chicago, in order to find employment, and in most cases it will be factory labor. A newly graduated high school senior, vocational agriculture or other, is not very employable in Southern Illinois.

On the basis of the above stated facts, including uneconomic sized farm units, low financial returns, a low percentage of vo-ag graduates getting established in farming, and poor employment opportunities in the home community, I firmly believe that vocational agriculture teachers, working any where where such conditions prevail, should encourage their students to consider college training for employment.

Critics will say, "Vocational agriculture departments should be discontinued in those areas where such conditions prevail." Undoubtedly this is happening in some communities, but I believe a broader look is justified.

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[1]Deyoe, G. P., Part-time Farming in Illinois, Division of Agricultural Education, University of Illinois, January 1957, p. 5.

In the first place there must have been a time when the school wanted a vo-ag department and certainly there must have been enough farm boys at that time and in the foreseeable future or the state department would not have granted permission to begin.

Boys living on smaller farms can have just as keen an interest in livestock, crops, soils, and farm mechanics as those living on larger farm units. For many boys, vocational agriculture and FFA activities are the incentive for staying in school.

At the out-set, we recognize that many vo-ag graduates are not capable of doing satisfactory college work. High school grades, rank in their high school class, and placement tests are reasonably good indicators. To become more employable, this group of young men should be encouraged to enter a vocational school to train for the semi-skilled and skilled jobs.

How well do those who enter college and do passing work succeed? Some states have conducted studies on this problem and found that if a boy has had two to four years of vocational agriculture and has good mental ability he will achieve just as well in college as those of equal ability but not having had vo-ag in highschool.

In conclusion, I should like to state that I believe vocational agriculture is being used in the same school in numerous cases both as a terminal education program and as an intermediate step. Boys with good opportunities to farm are taking three and four years of vo-ag while boys with limited opportunities are taking more college preparatory or general work in the junior and senior years. This is evidenced by the marked drop in reported class numbers in the 11th and 12th grades, particularly in some of the larger highschools. This has been verified in conversation with high school principals. It appears that some vo-ag instructors and principals in Southern Illinois are making some changes in the direction of using vocational agriculture as an intermediate step in formal education in agriculture.

Although this direction is counter to that provision in the original Smith-Hughes Act which states that "the instruction is terminal in nature and not a part of a course which is to be continued in a college or other higher institution", it appears that this may be a desirable and necessary trend in the vocational agriculture program.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATION PROGRAM OR AS AN INTERMEDIATE STAGE IN FORMAL EDUCATIONAL DEVELOPMENT?

G. F. Ekstrom

Current and prospective changes in the economy are such that graduates from vocational agriculture have need for training beyond high school if they are to succeed in agricultural occupations. It is fallacious to assume that the rank and file of boys at graduation are equipped with the experience, training or resources to enter directly into a full-time farming business.

College Training

Increasing numbers of graduates from vocational agriculture are entering colleges. This trend may disrupt progress toward establishment in farming for the individuals involved. It would seem however that our entire society benefits from advanced training of industrious young people who have the ability to perform satisfactorily in college.

Several studies have been made relative to performance in college of graduates from vocational agriculture. Data were tabulated at the University of Missouri for all students, except majors in forestry and home economics, enrolled in the College of Agriculture in 1955-56. The students with backgrounds in vocational agriculture performed conistently better than other students in basic courses in animal husbandry, dairy husbandry, farm mechanics, field crops and poultry. The background of vocational agriculture however had little bearing on grades earned in basic courses in botany and zoology.

Reports from different colleges of agriculture indicate that more than half of current enrollments are former students of vocational agriculture. Only a minority of these former students enter commercial farming upon graduation from college. However, there is a strong demand for college graduates in most professional phases of agriculture. Likewise the additional training serves to the advantage of persons entering highly skilled agricultural occupations.

Young and Adult Farmer Classes

We are told that less than 5 per cent of replacements on commercial farms are graduates from colleges of agriculture. This presents a tremendous challenge for providing systematic instruction at the post high-school level.

The problems confronting persons attempting to become satisfactorily established in farming are increasing in number and magnitude. Involved are the location of farms, capitalization and operating costs, and technological developments having to do with production, processing and marketing.

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The basic purpose of vocational education is that of training for proficiency in an occupation. Of the different groups with which teachers of vocational agriculture are identified, the young farmer certainly needs assistance and is in position to benefit from organized instruction. Yet in most states this phase of the program has lagged. As leaders and teachers in vocational agriculture, we have failed in large part to convince ourselves and school administrators that systematic instruction for out-of-school groups constitutes a major responsibility for which finances and teacher time should be allocated.

Classes for adult farmers have been somewhat more popular. Potential enrollments for such classes are available in all farming communities. Also, the operators are more fully established and in position to make immediate use of the instruction.

To be effective, instruction for young and adult farmers must be centered around critical problem areas. The instruction should be of a continuous nature and on both the group and individual basis.

Instruction in vocational agriculture for out-of-school groups fits into the concept of adult education. Certainly instruction of young and adult farmers should be coordinated with educational programs of other agencies within and without the school. The teacher of vocational agriculture need not pose as the authority on all matters having to do with farming. Certain other educational agencies and some commercial concerns are in position to provide specialized services. However, the teacher of vocational agriculture has an obligation to organize courses and to help coordinate educational programs involving young and adult farmers in the school community.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATION PROGRAM OR AS AN INTERMEDIATE STEP IN FORMAL EDUCATIONAL DEVELOPMENT?

Franklin E. Eldredge

Education starts at birth and ends at the grave; - no portion can truly be called terminal. Nevertheless, within our formal educational program, we define as terminal any course or set of courses which brings to a conclusion the school training within that specific field. Vocational agriculture may, therefore, be considered terminal if a student does not go on to college, and non-terminal if he does enter a college, regardless of whether he pursues further education in agriculture or some other field.

Within the framework of the educational system in the United States (with all its faults, still an excellent system), the schools through the twelfth grade are charged with the responsibility of educating all educable children. This tremendous assignment poses many problems, and a number of these problems have a very direct effect upon the vocational agriculture program. Some can be posed only as questions, since no satisfactory answers seem available. Should students be divided by appropriate tests, records of performance, etc. into college and non-college groups at 10-14 years of age and their educational programs outlined for them accordingly? Should such separated programs be available for election by the students? Would this election truly reflect differences in abilities, or would it also be strongly influenced by social background, ability to pay and cultural pressures? Regardless of the answers to these questions, the schools are still responsible for all, not for just the intellectually bright students.

We should recognize, of course, that for the student who intellectually is not college caliber, vocational agriculture would and should be terminal. Our problem here is concerned with the way in which the vocational agriculture program is handled for the potential college student. I am convinced that the same program, through flexibility in election of other courses, can serve both needs.

Undoubtedly one of the most important, and elusive, factors in the successful pursuit of an education is motivation, the desire and ambition to learn. This is inextricably tied up with personal interest. If vocational agriculture were to be considered as terminal only, we would be deliberately thwarting the interests of those students who, at the secondary level, wish to learn more about agriculture. Nearly every agricultural college has for years fought this same battle, between those faculty members who are convinced the sciences in the first year or two are the best background for agricultural courses and those who, on the other hand believe that some contact must be maintained with agriculture by the inclusion of some agricultural courses each semester.

Disagreement exists concerning the value of the vocational agriculture program in high school as preparation for college work. However, most studies attempting to relate the presence or absence

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of certain courses at the high school level to success in college have concluded that no significant relationship can be found. In an unpublished study at the University of Nebraska, students with vocational agriculture in high school received slightly higher grades and a larger percentage continued in college to graduation than did the students without vocational agriculture. The inherent ability of the student and his attitude toward his college work seems much more important than his specific high school courses. The vocational agriculture program can provide the proper atmosphere for development of an open and inquiring mind provided that administration of the program at the national, state, and local level remain sufficiently flexible. Well-founded criticism of the program as preparation for college has usually come from contact with rigid, time-consuming schedules which precluded the election of academic courses in high school.

Agriculture needs broadly educated, adaptable young people who, to the limit of their respective abilities, can adjust to changing times. This means that the vocational agriculture program in our secondary schools must be broad enough and flexible enough that as each agriculturally-interested student graduates, he represents a development commensurate with his own abilities so that he can step immediately into a job or can pursue his education in a college of his choice.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL PROGRAM OR AS AN INTERMEDIATE STEP IN FORMAL EDUCATION IN AGRICULTURE?

Alfred H. Krebs

Although the final conclusions regarding the question proposed for discussion probably could be quickly drawn, the question does deserve attention and debate. It is not always the conclusion which is the most important aspect of a problem; sometimes it is the philosophy upon which the conclusion is based. An examination of the implications of the question should provide the key to the philosophy upon which the conclusion is based as well as the key to the conclusion itself.

Before I begin, I would like to comment briefly on an aspect of the question proposed for discussion that needs clarification. Is the question being discussed that of whether boys who eventually go to college should take vocational agriculture or whether vocational agriculture should somehow be redesigned to make it more valuable to the boys who do go to college? I am assuming that our concern here is more for the question of whether boys who go to college should take vocational agriculture although the other question has some intriguing possibilities for debate.

As stated before, the question we are to discuss implies that certain things are true. I will now discuss these implications:

1. That we know what a good college preparatory program is and that following it will lead to success in college.

There is much evidence to indicate that we do not know what a good college preparatory program is. The variation in requirements for admission to college gives us ample evidence of the confusion existing with regard to what should be required. Examination of the high school programs of successful college students reveals all kinds of variations. Aiken's[1] report on the eight-year study dealing with curriculum problems on the secondary level indicated that students meeting the traditional college entrance requirements were not more successful in college than were students who did not meet the traditional requirements. There have been many studies which show that boys taking vocational agriculture can and do achieve well in college. A recent unpublished study at the University of Illinois of the effect of high school physics on grades in the first physics course in college revealed that it had no effect.

It is doubtful if there is much basis for college entrance requirements, in terms of courses, which go beyond skill in communications and skill in the use of mathematical symbols.

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[1] Aiken, Wilford M. "Some Implications of the Eight-Year Study for all High Schools and Colleges," North Central Association Quarterly, 17:274-280. 1943.

2. That we can determine who is and who is not capable of succeeding in college.

That boys with ability to succeed in college can be identified with some success is not to be denied. However, the means available for identifying boys with high scholastic aptitude are still too inaccurate to be used for more than just a taking off point in guidance concerning college attendance. In addition there are many other factors affecting college success which must be considered and which often outweigh scholastic aptitude in determining the success of any particular individual.

Then, too, colleges adjust their standards regarding level of ability required for admission to the student supply. Are we to encourage many students to take the college preparatory program who we really feel are not capable of college work just to make certain that the colleges can be filled? What should be the cutting point, and who should determine it?

3. That it is possible to make the high ability student go to college and keep the low ability student out of college.

Although we can exert an influence in this regard, it is obvious that we can not force either enrollment or nonenrollment in college. Furthermore, persons forced to attend college do not make the best students.

4. That colleges will provide the proper vocational preparation for all who attend.

To indicate that colleges can and will provide all necessary vocational preparation needed for those who attend is to disregard such facts as the number of college graduates who enter occupations for which they did not prepare, the number of students who do not graduate, and the many training programs provided by businesses for the college graduates they employ. It may well be that vocational agriculture is equally as important to success in some occupations as is a college degree even when a college degree is required.

5. That students capable of doing college work will remain in high school obediently and peacefully following the program of courses prescribed for college admission.

It is still a matter of history that both students and parents are interested in vocational preparation at the high school level. Not to provide vocational preparation would, I believe, lead some capable students to drop out of school and their parents to withdraw their support from the schools.

6. That we need not concern ourselves with the welfare of those students we direct through a college preparatory program who do not quite make the grade or who decide not to go to college.

It is necessary to provide for each student a program which will enable him to have some flexibility of choice. Vocational agriculture provides some of that flexibility for those who choose to take it.

7. That there will be no completely free-choice electives in the college preparatory program.

To treat vocational agriculture as a completely terminal program presumes that students who have the ability to succeed in college will not be permitted to enroll even on an elective basis. This means no free electives for the student, a situation which does not appear to be enforceable.

8. That the public wants and will accept the kind of authoritarianism in education necessary to make certain that all boys capable of college success follow the prescribed program.

Studies of the public attitude toward vocational education indicates that a high value is placed on students being prepared for something in high school--and not just for further formal education. Any attempt to legislate otherwise is doomed to failure.

Some persons may feel that the position represented by the above implications is rather extreme and, as such, is not indicative of the true situation. However, if the position to be taken is not clear cut with definite boundaries, then there is no need for debate. Each person would be free to make his own interpretations regarding the issue. My own opinion is that we have but one conclusion we can draw regarding the original question proposed--that enrollment in vocational agriculture must neither be denied the college-bound nor make admission to college impossible; that vocational agriculture will be for some a terminal program and for others an intermediate step in a program of formal education in agriculture.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATION PROGRAM OR AS AN INTERMEDIATE STAGE IN FORMAL EDUCATIONAL DEVELOPMENT?

R. W. Montgomery

Vocational agriculture cannot be treated as a terminal education program. Current demands seem to suggest that it be a foundations program rather than a terminal program. This is needed for those who will go to college as well as for those who will remain on the farm and continue their education in young-farmer and adult classes.

This foundation should include: (1) guidance and exploratory experiences in farming, agribusiness, and non-agricultural occupations available to rural people; (2) development of basic skills and understandings in the mechanics of the farm and home; (3) introduction to the business of farming and agricultural economics; and (4) application of basic sciences to the production of crops and animals.

Vocational agriculture has contributed much to the current advances in agriculture. However, much of the job has been done with little use of the printed page, and little understanding of the basic principles involved. This is especially true in adult farmer education. Modern agriculture is too advanced for this condition to continue. The successful farmer of today cannot keep himself informed without a good background or foundation in agriculture and its application of scientific and business principles. The same kind of preparation in basic fundamentals is required for those who will go to college.

The supervised farming program is still essential in developing this kind of foundation. It is just as essential for the boy who will go to college as it is for the future farmer. For the boy who goes to college his actual experience in farming will be terminated at the age of 18 - probably forever.

The leadership elements in the vocational agricultural program are among its most valuable contributions and, of course, can never be "terminal". The "exploring" or "try-out experiences" and ownership or partnership programs are ideal for self-discovery. The Future Farmers of America program has many activities, contests, and opportunities for self-discovery and development. Anyone who has seen these boys perform at a state or national convention must have been impressed at the potentialities of these farm boys as they perform in conducting their business and compete in contests of public speaking, parliamentary procedure, music, livestock judging, and many others for which prizes are awarded. The members learn to plan, organize and conduct their own programs under the supervision of their teacher. They learn to work in committees, conduct school and community projects; they learn through experience the meaning of school-community interaction; they learn to practice democracy as they grow in citizenship. These learning experiences are basic to future growth; they should never be thought of as terminal.

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A director of a state school of correction recently stated that his job would be easy if all boys had the opportunities afforded by vocational agriculture and the FFA. He added that those schools that have no vocational agriculture would do well to provide for at least one teacher to work in the homes and in the community as these teachers do. It is a valuable tie between home and school that contributes to continuing education.

Vocational agriculture should give more attention to the boy who might want to go to college. A national land grant college committee estimated that the nation needs 15,000 college graduates annually in the field of agriculture. Only about one-half this number are being graduated. As already indicated, the high school program in agriculture needed by the future farmer is similar to that needed by the boy who is going to college. Both must get a foundation of learning and experience upon which they can continue to develop .

We are in error if we assume that the majority of boys of high school age, because of their maturity, can be expected to make final decisions as to their life's work. The vocational field is growing and changing too rapidly for such early planning. For this reason vocational agriculture should not be too restricted in its acceptance of students, especially in the early years of the program.

Other reasons for a liberal policy of admitting pupils to vocational agriculture in high school include: (1) the need for keeping the public informed about agriculture to avoid misunderstanding of a minority group, (2) a general need for some knowledge of the basic sciences as they relate to growing plants and animals, (3) need for an introduction to, and gaining some basic skills in, home and farm mechanics as a background for farming as well as effective home membership, (4) talent discovery and leadership training, especially as provided through the FFA, and (5) an introduction to a vocation and its inter-relationships with other vocations and with society in general.

These values, as well as those concerned with the controlling purpose of establishment in farming as it is now developing, all suggest the desirability of a basic course in the fundamentals of agriculture and related discipline which will provide a foundation for future growth in farming as well as in many other vocations or interest.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATION PROGRAM OR AS AN INTERMEDIATE STAGE IN FORMAL EDUCATIONAL DEVELOPMENT?

Richard M. Swenson

A year and a half ago while presenting the agricultural curricula reorganization at Michigan State University to the resident instruction section at the land grant college meetings in Denver, Colorado, I predicted there would be more changes in agricultural curricula in the next five years than in the past 50. The number of requests for information concerning our curricula changes and the number of reports we receive about changes at other institutions seem to lend some validity to the prediction.

It seems to me there are four general trends indicated by the curricula changes throughout the country.

First, a trend toward requiring of all majors a more intensive foundation in the sciences fundamental to agriculture.

There are several underlying reasons for this trend. Agriculture is an applied science--even though we speak of "scientific agriculture" or agricultural science", it is not a science in itself. The science we apply to agriculture has advanced beyond the high school level. As agriculture becomes more highly specialized and competitive and as we seek better methods and more efficiency, not only in production but in marketing and processing as well, more advanced knowledge will be required. This means our students must have a greater understanding of the sciences or they will be unable to make contributions to the advancement of agriculture.

No one can be expected to apply principles which he does not understand. We stand still when we operate by a recipe. We make progress when we understand what we are doing. These statements should not be interpreted as minimizing the importance of application of existing knowledge. It is wasteful to have the tools and not know how to use them. However, our problem is not too few applied courses but rather too little understanding of the basic principles which are applied.

Another is an attempt to alleviate the pressure of having to teach an ever-increasing amount of knowledge in a limited period of time. Research scientists are constantly adding to our supply of information. I have read that our total amount of knowledge is doubling about every 14 years. In the past, this problem has been met by adding new courses. We cannot continue this pattern, for if we do, we will have to increase the number of years required for our present degrees or establish degrees beyond our present Ph.D. The inclusion of more science is a shift to principles which are operative over broad areas and thus serve as a more efficient, and also better, foundation for an education than does masses of descriptive material.

Many have come to the conclusion that too much time is spent teaching students arts which change, when we should be putting greater emphasis on lasting principles.

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In so doing, we are not being fair to the students--we are in effect boxing them in and limiting their future development. I am referring to the type of training--where we prepare the student to handle the skills required for a particular job. We prepare him well for the first few years of his job, but are we really preparing him to move ahead, to assume responsibility, to hold the positions which require a grasp and understanding of the entire situation?

A second trend--somewhat related to the first, is the establishment of an agricultural science major or curriculum. Colleges of agriculture, in general, I believe, have lacked a scientific curriculum for the real good student who knows he is going to continue with a graduate program. It seems that we haven't been able to admit that a student can prepare himself for a scientific career in agriculture without going ghrough the gamut of applied courses. Yet we are very happy to have a good chemistry graduate enroll for a master's or doctor's degree in one of our departments.

Third--is the trend towards the introduction of a genuine agricultural business major into our curricula offerings. This has been long overdue and offers one of the most interesting and challenging undertakings in a long time. With the national interest and a national study getting underway, we expect significant developments in this area.

A fourth trend in curricula reorganization is to reduce the degree of specialization at the bachelor's level. In the past, specialization at the bachelor's level was possible because that was as far as agriculture had advanced. Today, it takes more time to acquire the amount and type of knowledge required for specialization. Therefore, when someone wants to hire a specialist in some phases of agriculture, he looks for a person with a master's or doctor's degree.

The demands placed upon the vocational agriculture teacher, if he is to do the kind of job we have been discussing during these meetings are tremendous. He must be looked up to as the agricultural leader in his community. He must know the entire field of agriculture. In addition to principles, he must know skills. He is required to take a number of professional education courses. All these requirements place a tight squeeze upon the agricultural education curriculum. He must be a top caliber individual and student to accomplish the task.

In view of the demands placed upon him, and the changes occurring in agriculture for which he must be prepared, I question that we can, or should, continue to try to prepare him for two teaching jobs--vocational agriculture and farm shop. I am not talking about the integration of farm power and machinery into the agricultural courses but the teaching of separate farm shop courses.

There is another reason why I question the advisability of the vocational agriculture teacher teaching farm shop. Let me explain by relating an experience. I had luncheon with five or six principals during our principals conference (the high school principals come to the campus to meet with their former students and then with university staff). During the conversation, I told them of our curricula changes and of our desire for a larger share of their good students. The reply was--"The answer is simple--you will never be able to attract the best students as long as the vocational agriculture program in the high school has the reputation for attracting the tail-enders." The principal speaking went on to say that in his school when a student is unable to make it in other classes he takes

him down to the farm shop and tells the vocational agriculture instructor to take care of him. Others said that was what they did too. I do not wish to imply that this is typical in all schools in Michigan, but such comments should give us cause for serious concern. If the reputation of the vocational agriculture program is being impaired as a result of our farm shop courses, we should drop them and concentrate our efforts on the kind of program required for today's agriculture.

Chemistry, mathematics, biology and physics should be prerequisites for high school agricultural courses. The vocational agricultural instructor should teach agriculture at such a level that a knowledge of the scientific principles taught in these courses would be a necessity. I believe the vocational agriculture teacher and sciences teachers should work together to coordinate their teaching programs. Such an arrangement would give meaning to the principles taught in the science classes and thus spark the students interest and learning in these courses, as well as provide a better foundation upon which to build the agricultural courses.

We have some vocational agriculture teachers in Michigan who are teaching this way. Clark Bullen at Portland spearheaded a project in which his students constructed exhibits showing the application of scientific principles learned in various science classes to their high school agriculture.

A recent study by John L. Holland, Director of Research for the National Merit Scholarship Corporation showed that "bright students congregate in institutions with high indices of scientific achievement." Since this is true for institutions we can assume that the same is true for programs within the high school. This would indicate that if we desire to have the best students in vocational agriculture we should make the agricultural program as challenging as any in the high school.

In conclusion, in my opinion students for tomorrow's agriculture will need more than a vocational agriculture program in high school. To be consistent with such a view, I must conclude that vocational agriculture should not be a terminal program.

SHOULD VOCATIONAL AGRICULTURE BE TREATED AS A TERMINAL EDUCATIONAL PROGRAM OR AS AN INTERMEDIATE STAGE IN FORMAL EDUCATIONAL DEVELOPMENT?

John R. Williams

Leaders in agricultural education have long recognized the responsibility of vocational education in agriculture to help meet all the educational needs of young men. The monograph published by the U. S. Office of Education entitled Educational Objectives in Vocational Agriculture says specifically that the aims of vocational education in agriculture "must be in harmony with and support the general objectives and philosophy of the whole of public school education". It goes on to list general aims of education such as developing the individual as completely as possible, promoting personal-group relationships with emphasis upon home and family life, making individuals and groups responsive to the needs of others, etc. Dr. Hamlin in his talk yesterday emphasized this part of our job.

Vocational agriculture teachers are in a unique position to help meet these needs. Most vocational agriculture teachers have each boy in one of their classes for at least one hour a day for four years. He visits each boy's home and works with the boy and his parents on money making and home and farm improvement projects, and encourages the development of skills in doing all farm jobs. This is really an ideal situation for working effectively with boys. Most teachers of vocational agriculture realize this opportunity and responsibility and are working toward meeting those general educational needs. I gathered from this group's reaction to Dr. Hamlin's remarks yesterday that you too agree on this point.

Some of you may remember a study I conducted a few years ago in which I tried to find out what practices vocational agriculture teachers were conducting to try to meet the general educational or non-technical needs of their students. I asked all the head teacher-trainers in each of the 48 states to send me the names of six teachers in their state who were aware of this opportunity and were trying to meet these needs. I used the same list of need areas that was used in a similar study conducted by the Curriculum Planning and Development Committee of the National Association of Secondary School Principals, called the "Ten Imperative Needs of Youth". These needs were (1) vocational (2) health (3) citizenship (4) family life (5) consumer ability (6) scientific understanding (7) aesthetic appreciation (8) wise use of leisure time (9) ethical and moral values (10) ability to think and communicate.

I sent a questionnaire to each teacher whose name had been furnished by his teacher-trainer. In the questionnaire the teachers were asked to indicate what practices they were conducting with their students to help them meet their needs in each of these 10 areas. One hundred and sixty-four teachers responded with a list of more than 1,100 different activities that they had found effective in meeting those needs.

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These teachers were also requested to furnish a list of names and addresses of six of their former students whom they believed were well adjusted. Those former students were also sent a questionnaire on which they were asked objective questions designed to ascertain their adequacy in each of these 10 areas. Such questions as "Are you registered so that you can vote?", "Do you follow a written budget for most of your spending?", etc. were asked. These men were further requested to indicate whether their instructor of vocational agriculture had "greatly" influenced this situation, "somewhat" influenced the situation, or had "nothing" to do with the situation.

As you would all expect, the replys from these men indicated that they were very well adjusted in the vocational area and they gave their former vocational agriculture teacher credit for it. Their responses also indicated that they were fairly well adjusted in the areas of health, family, leisure time, ethics, and communications. They seemed to be least adequate in the areas of citizenships, consumer skills, and aesthetic appreciation. You may be interested to know that these men gave their agriculture teacher most credit for their adequacy in the vocational area, some credit for their adequacy in the consumer area, the areas of scientific understanding and ability to communicate. They gave their agriculture teacher little credit for their adequacy in their use of leisure time and ethical standards, and little or no credit for their adequacy in the area of health, citizenship, family life and aesthetic appreciation.

I am not trying to say that this study proves that teachers of vocational agriculture are meeting all the needs of all their boys. We admit that the teachers were selected for their interest in this area and the students were selected by those teachers. However, I believe that this study does show that teachers of vocational agriculture who are sensitive to these needs of their students can and are meeting effectively these needs; more successfully in some areas than in others. I submit, therefore, that the vocational agriculture program, because of its organization, and with its present objective, is the most effective program any rural high school student can study in preparation not only to be a farmer, but any other agricultural job as well.

Before closing I would like to re-emphsize a point touched on several times in these two days relative to the need in agricultural fields for young men with a background in a high school vocational agricultural program.

We are told that there are annually 15,000 jobs for the 6,500 graduates from all of our agricultural colleges. This gap between supply and demand is actually widening because, while college enrollment in general is increasing, the enrollment in agricultural colleges is staying the same or decreasing. In spite of this discrepancy between supply and demand, many of our agricultural graduates can't find good jobs. This is due to at least two reasons:

(1) A high percentage of students in the colleges of agriculture are not farm boys. For the past three years less than 25 percent of the freshman students who enrolled in the College of Agriculture at the University of Arizona were either farm or ranch reared boys. This situation is probably more or less true in many other colleges of agriculture. A farm background, or at least farm experience, is highly desirable for most of the jobs for

which agricultural college graduates are selected. It is hard for a boy who has not had that experience to get it at college. Most institutions look down on skill-type courses and either don't offer them or offer them with little or no credit in programs like the farm placement program at Davis. I submit that the training and experience a town boy could receive from the total vocational agriculture program would be the most valuable preparation any high school boy could receive to meet this deficiency in his professional background.

(2) Another factor is that the present popularity of engineering, electronics, and other glamour courses lure many of our top farm boys out of agriculture. Others are actually counselled to get into some other field. This has resulted in a lowering of both quantity and quality of students studying agriculture, both in the high schools and in the college.

Our insistance that vocational agriculture be a terminal program, available only to boys who come from farms who can go back to farms, keeps many boys out of the program. I believe that if we would face up to the responsibility of offering the educational advantages of vocational agriculture to the boys who have limited opportunity for going into farming, but who hope to qualify for a vocation in agriculture, we would improve the quantity and quality of agricultural education on all levels.